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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/624,865	07/22/2003	Terry Joe Hanna	6971CIP	7652

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EXAMINER	
DEGHAN, QUEENIE S	

ART UNIT	PAPER NUMBER
1731	

MAIL DATE	DELIVERY MODE
06/01/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/624,865

Applicant(s)

HANNA ET AL.

Examiner

Queenie Dehghan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 March 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-80 is/are pending in the application.
- 4a) Of the above claim(s) 71-80 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-70 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 February 2007 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 15, 2007 has been entered.

### ***Drawings***

1. The drawings were received on February 9, 2007. These drawings are not acceptable because of inconsistencies with the newly labeled parts, i.e. 118 and 119, as described in the following paragraphs.

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: item 119. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of

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an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "118" has been used to designate both a cell in figure 9A and portion of the tip plate in figure 11. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

4. In addition to Replacement Sheets containing the corrected drawing figure(s), applicant is required to submit a marked-up copy of each Replacement Sheet including annotations indicating the changes made to the previous version. The marked-up copy must be clearly labeled as "Annotated Sheets" and must be presented in the amendment or remarks section that explains the change(s) to the drawings. See 37 CFR 1.121(d)(1). Failure to timely submit the proposed drawing and marked-up copy will result in the abandonment of the application.

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claim 2, 32, 62 and 63 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Regarding claims 2, 32 and 62, although the disclosure mentions several times laying a screen on top of a conventional screen, the Examiner fails to see where in the disclosure does a conventional screen lays on top of the support structure, and hence the screen on top of a convention screen which is on top of the support structure. If the Examiner is incorrect in this rejection, please point out the exact page and line number indicating support for the recited claims.

3. Regarding claim 63, the specification offers support for a bushing with "about" 4030 tips, which is not the same as "at least" 4030 tips. If the Examiner is incorrect in this rejection, please point out the exact page and line number indicating support for the recited claims.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coggin, Jr. (3,988,135) in view of Harris (3,628,930) or Stalego (3,810,741) and Hanna et al. (EP 1 193 225).

7. Coggin, Jr. discloses a bushing (26) capable of receiving molten material from a bushing leg of a glass tank (col. 2 lines 55-66) with two opposed side walls and two end walls (34), a tip plate (38), wherein the tip plate is attached to the side walls and end walls and the bushing having a boxlike shape with at least four interior corners (figures 6 and 7, col. 3 line 58 to col. 4 line 12). Furthermore, Coggin, Jr. discloses a screen, wherein the entire bottom of a screen (46) rest on top of an interior support structure

(44) made of a precious metal (col. 4 lines 34-36), such that the screen is located so close to the top of the support structure that the distance from the bottom of the screen to the top of the support structure is less than that at which lateral flow of molten glass from cell to cell becomes significant. Furthermore, the interior support structure comprises a plurality of intersecting supports with angles and cooperates with at least one sidewall and one end wall, forming cells between the bottom of the screen and the top of the tip plate (figures 3, 5, 7 & 8, col. 4 lines 26-45, col. 5 lines 20-23).

Additionally, Coggin, Jr. discloses tips or nozzles extending from a lower surface of a tip plate as a typical feature in prior art (col. 1 lines 24-27). However, Coggin, Jr. fails to teach the number of orifices and tips in the tip plate, or a screen containing holes with varying screen areas above the cells. Also, although Coggin, Jr. teaches numerous cells formed with the interior support structure, Coggin, Jr. fails to specify how many cells are formed.

8. As mentioned, Coggin, Jr. fails to disclose a screen having a plurality of screen areas. Both Harris and Stalego teach a bushing (24, 30 in fig. 1 respectively) having a plurality of screen areas containing holes through the screen and the hole area per unit screen area being different in some screen areas than in other screen areas (col. 3 lines 45-58 & fig. 3, col. 4 lines 50-51, 58-59 & fig. 3, respectively). Doing so would allow for uniform temperature of the glass supplied to the tip plate, as taught by both Harris and Stalego. In addition, both Harris and Stalego teach of a screen in a bushing wherein a screen area closest to each corner and end wall of the bushing has a hole area per unit screen area that is substantially greater than that of the screen areas that are closest to

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the centerline of the screen in Figures 3 (col. 4 lines 58-59, col. 3 lines 41-59, respectively). It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the screens with varying screen areas of either Harris or Stalego in the screen of Coggin, Jr. in order provide a more uniform temperature for the molten glass supplied to the tip plate, as taught by Harris and Stalego.

9. As mentioned previously, Coggin, Jr. fails to mention the number of orifices and tips in the tip plate or the number of cells form from the interior support structure.

Hanna et al. teach of an interior support structure welded to a top surface of the tip plate for supporting the tip plate ([0033]). Additionally, the tip plate has at least 1600 orifices and hollow tips ([0030]), for example, a bushing with 4030 tips ([0031]). Furthermore, the interior support structure comprises a plurality of intersecting or crossing internal supports with angles between the intersecting supports at each intersection to form diamond shaped cells and attached to the sidewalls, end walls, and interior corners of the bushing and forming 47 cells located between the bottom of the screen and the top of the tip plate (figures 2, 4, and 5, [0033]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the internal support structure of Hanna et al. in the bushing of Coggin, Jr. and Harris or Stalego in order to offer efficient support of the tip plate while encountering hot molten glass, as taught by Hanna et al.



***Double Patenting***

10. Claim 1, 31, and 61 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 3-4 of U.S. Patent No. 7,194,875 in view of Coggin, Jr. ( 3,988,135) and Hanna et al. (EP 1 193 225). Claims 1, 31, and 61 in application '865, and claims 1 and 3-4 of the patent 7,194,875 claim a bushing comprising of at a least one side wall, a tip plate, and a screen mounted in the interior of the bushing and spaced above the top of tip plate, wherein the screen has a hole area per unit screen area that is different from other screen areas. However, application '836 and patent '875 do not disclose the shape of the bushing, a screen with varying screen areas and the location of the screen, the number of orifices in the tip plate, or an interior support structure Coggin, Jr. discloses a bushing (26) capable of receiving molten material from a bushing leg of a glass tank (col. 2 lines 55-66) with two opposed side walls and two end walls (34), a tip plate (38), wherein the tip plate is attached to the side walls and end walls and the bushing having a boxlike shape with at least four interior corners (figures 6 and 7, col. 3 line 58 to col. 4 line 12). Furthermore, Coggin, Jr. discloses a screen, wherein the entire bottom of a screen (46) rest on top of an interior support structure (44) made of a precious metal (col. 4 lines 34-36), such that the screen is located so close to the top of the support structure that the distance from the bottom of the screen to the top of the support structure is less than that at which lateral flow of molten glass from cell to cell becomes significant. Furthermore, the interior support structure comprises a plurality of intersecting supports with angles and cooperates with at least one sidewall and one end wall, forming cells between the

bottom of the screen and the top of the tip plate (figures 3, 5, 7 & 8, col. 4 lines 26-45, col. 5 lines 20-23). Additionally, Coggin, Jr. discloses tip or nozzles extending from a lower surface of a tip plate as typical in prior art (col. 1 lines 24-27).

11. Additionally, 1 and 3-4 of the patent 7,194,875 recite a similar limitation of a screen with different screen areas.

12. Hanna et al. teach of an interior support structure welded to a top surface of the tip plate for supporting the tip plate ([0033]). Additionally, the tip plate has at least 1600 orifices ([0030]). Furthermore, the interior support structure comprises a plurality of intersecting or crossing internal supports with angles between the intersecting supports at each intersection to form diamond shaped cells and attached to the sidewalls, end walls, and interior corners of the bushing and forming 47 cells located between the bottom of the screen and the top of the tip plate (figures 2, 4, and 5, [0033]).

13. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the interior support structure of Hanna et al. and the box shape bushing with the location of the screen in the bushing of the bushing of Coggin, Jr. in the bushing of the copending applications '863 and '683 to provide for a more uniform temperature for the molten glass supplied to the tip plate and to offer efficient support of the tip plate while encountering hot molten glass, as taught by Hanna et al.

### ***Response to Arguments***

14. Applicant's arguments filed March 15, 2007 have been fully considered but they are not persuasive.

15. In regards to applicant's arguments with respect to the 112 1<sup>st</sup> paragraph rejection made on claims 2, 32 and 62, the rejection still stands. The areas of the specification pointed out in the applicant's reply dated March 15, 2007 on the last paragraph of page 17 do not offer support for a conventional screen that lays on top of a support structure.

16. In regards to the applicant's arguments with respect to Coggin, Jr. failing to suggest tips on the tip plate, as mentioned in the above rejection, Coggin, Jr. discloses tips or nozzles extending from a lower surface of a tip plate as a typical feature in prior art.

17. In regards to the applicant's argument with respect to Coggin, Jr. teaching of the apertures in the ribs; although Coggin does point out that glass can flow from one cell to the another, it doesn't necessarily mean that it actually does, and claim 1 recites the limitation "that at which lateral flow of glass from cell to another becomes significant", indicating that some flow between cells does exist. Also, Coggin support structure prevents the sagging of the tip plate, as similarly suggested by the applicant. One of ordinary skill in the art would look to Coggin to teach the use of an interior support structure to prevent the sagging of the tip plate.

18. In regards to the applicant's arguments with respect to Harris and Stalego, Harris and Stalego were used to teach a specific screen in a bushing that helps maintain optimization of tip plate temperature profiles and not for the teaching of an interior support structure, which Coggin already has. One of ordinary skill in the art would look to Harris and Stalego for a modified screen to be used in a bushing such as Coggin for

a uniform temperature profile of the molten glass. Although the screen of Harris utilizes marbles at first, the screen obviously is in constant contact with molten glass once the process proceeds. The bushing of Coggin also has 800 orifices and utilizes an interior support structure, therefore, one of ordinary skill would look to Hanna for an interior support structure for a superior performance in the 800 orifice bushing of Coggin.

19. In regards to the applicant's argument that Harris states the end of bushings tend to be of a higher temperature and that the cooling of the center portion is due to the inlets for the solid glass. The applicant's cause of the higher temperatures in the bushing is purely speculative and the temperature profile of the glass at or above the screen will probably not be the same as the temperature profile of the glass at the tip plate. In fact, since Harris recognizes that there is a temperature difference in the bushing at the ends, Harris remedies the problem with a special screen and therefore promoting a more uniform temperature profile at the tip plate. Furthermore, Harris also presents "a higher open area per unit of screen at the end regions than the center". It is not clear how this teaches away from the claimed invention, since the applicant recites a higher hole area at the ends. A higher open area is a higher hole area.

20. In regards to the applicant's argument with respect to Stalego, Stalego was used for the teaching of the screen and a plurality of screen areas, not the number of cells created by the interior support structure. Hanna was use to teach the number of cells formed.

21. It is noted that the prosecution history of another application, specifically, the prosecution history of application no. 08/929,836 with reference to the Boards of

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Appeals decision No. 2000-0035 is independent to the prosecution of the current application.

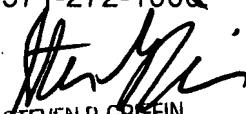
### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Queenie Dehghan whose telephone number is (571)272-8209. The examiner can normally be reached on Monday through Friday 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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